

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-171. (Canceled)

172. (Currently Amended) A double-stranded DNA construct comprising:

a first structural gene sequence comprising ~~20-30~~about 20 consecutive nucleotides identical in sequence to a region of a target gene encoding a viral DNA polymerase, a viral RNA polymerase or a viral coat protein in a mammalian cell;

a second structural gene sequence comprising ~~20-30~~about 20 consecutive nucleotides identical in sequence to, and in an inverted orientation relative to, the ~~20-30~~about 20 consecutive nucleotides of the first structural gene sequence, such that a repeating sequence which is only ~~20-30~~about 20 consecutive nucleotides in length identical to the region of the target gene is present in the DNA construct;

a stuffer fragment which consists of nucleotides and which separates and links the first and second structural gene sequences;

a promoter operable in the mammalian cell; and

a transcription termination sequence active in the mammalian cell,

wherein the repeating sequence within the DNA construct is only ~~20-30~~about 20 nucleotides in length, and

wherein the first structural gene sequence, the stuffer fragment and the second structural gene sequence are all operably connected to the promoter and the transcription termination sequence.

173-175. (Canceled)

176. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the region of the target gene is in an exon.
177. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the target gene is from a lentivirus.
178. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the target gene is from an immunodeficiency virus.
179. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the target gene is from a single-stranded (+) RNA virus.
180. (Canceled)
181. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the stuffer fragment is a sequence of nucleotides 10-50 nucleotides in length.
182. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the stuffer fragment is a sequence of nucleotides 50-100 nucleotides in length.
183. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the stuffer fragment is a sequence of nucleotides 100-500 nucleotides in length.
184. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the total length of the double-stranded DNA construct is no more than 0.5-2.0 kilobases.
185. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the double-stranded DNA construct is in

a virus particle.

186. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the double-stranded DNA construct is in a liposome.
187. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the double-stranded DNA construct is integrated into the genome of the mammalian cell.
188. (Currently Amended) A mammalian cell having a DNA construct comprising:
- a first structural gene sequence comprising ~~20-30~~about 20 consecutive nucleotides identical in sequence to a region of a target gene encoding a viral DNA polymerase, a viral RNA polymerase or a viral coat protein in the mammalian cell;
 - a second structural gene sequence comprising ~~20-30~~about 20 consecutive nucleotides identical in sequence to, and in an inverted orientation relative to, the ~~20-30~~about 20 consecutive nucleotides of the first structural gene sequence, such that a repeating sequence which is only ~~20-30~~about 20 consecutive nucleotides in length identical to the region of the target gene is present in the DNA construct;
 - a stuffer fragment which consists of nucleotides and which is between and links the first and second structural gene sequences;
 - a promoter operable in the mammalian cell; and
 - a transcription termination sequence active in the mammalian cell,
- wherein the repeating sequence within the DNA construct is only ~~20-30~~about 20 nucleotides in length, and
- wherein the first structural gene sequence, the stuffer fragment and the second structural gene sequence are all

operably connected to the promoter and the transcription termination sequence.

189. (Canceled)

190. (Previously Presented) The mammalian cell of claim 188, wherein the region of the target gene is in an exon.

191. (Previously Presented) The mammalian cell of claim 188, wherein the target gene is from a lentivirus.

192. (Previously Presented) The mammalian cell of claim 188, wherein the target gene is from an immunodeficiency virus.

193. (Previously Presented) The mammalian cell of claim 188, wherein the target gene is from a single-stranded (+) RNA virus.

194. (Canceled)

195. (Previously Presented) The mammalian cell of claim 188, wherein the stuffer fragment is a sequence of nucleotides 10-50 nucleotides in length.

196. (Previously Presented) The mammalian cell of claim 188, wherein the stuffer fragment is a sequence of nucleotides 50-100 nucleotides in length.

197. (Previously Presented) The mammalian cell of claim 188, wherein the stuffer fragment is a sequence of nucleotides 100-500 nucleotides in length.

198. (Canceled)

199. (Previously Presented) The mammalian cell of claim 188,

wherein the DNA construct is integrated into the genome of the mammalian cell.

200. (Currently Amended) An isolated mammalian cell, tissue or organ, having a DNA construct comprising:

a first structural gene sequence comprising ~~20-30~~about 20 consecutive nucleotides identical in sequence to a region of a target gene encoding a viral DNA polymerase, a viral RNA polymerase or a viral coat protein in the mammalian cell;

a second structural gene sequence comprising identical in sequence to, and in an inverted orientation relative to, the ~~20-30~~about 20 consecutive nucleotides of the first structural gene sequence, such that a repeating sequence which is only ~~20-30~~about 20 consecutive nucleotides in length identical to the region of the target gene is present in the DNA construct;

a stuffer fragment which consists of nucleotides and which is between and links the first and second structural gene sequences;

a promoter operable in the mammalian cell; and

a transcription termination sequence active in the mammalian cell,

wherein the repeating sequence within the DNA construct is only ~~20-30~~about 20 nucleotides in length, and

wherein the first structural gene sequence, the stuffer fragment and the second structural gene sequence are all operably connected to the promoter and the transcription termination sequence.

201. (Canceled)

202. (Previously Presented) The isolated mammalian cell, tissue or organ of claim 200, wherein the region of the target

gene is in an exon.

203. (Previously Presented) The isolated mammalian cell, tissue or organ of claim 200, wherein the target gene is from a lentivirus.
204. (Previously Presented) The isolated mammalian cell, tissue or organ of claim 200, wherein the target gene is from an immunodeficiency virus.
205. (Previously Presented) The isolated mammalian cell, tissue or organ of claim 200, wherein the target gene is from a single-stranded (+) RNA virus.
206. (Canceled)
207. (Previously Presented) The isolated mammalian cell, tissue or organ of claim 200, wherein the stuffer fragment is a sequence of nucleotides 10-50 nucleotides in length.
208. (Previously Presented) The isolated mammalian cell, tissue or organ of claim 200, wherein the stuffer fragment is a sequence of nucleotides 50-100 nucleotides in length.
209. (Previously Presented) The isolated mammalian cell, tissue or organ of claim 200, wherein the stuffer fragment is a sequence of nucleotides 100-500 nucleotides in length.
210. (Canceled)
211. (Previously Presented) The isolated mammalian cell, tissue or organ of claim 200, wherein the DNA construct is integrated into the genome of the isolated mammalian cell, tissue or organ.

212. (Previously Presented) The double-stranded DNA construct of claim 172, wherein the first structural gene sequence consists of 20 consecutive nucleotides identical in sequence to a region of a target gene encoding a viral DNA polymerase, a viral RNA polymerase or a viral coat protein in a mammalian cell, and the second structural gene sequence consists of 20 consecutive nucleotides identical in sequence to, and in an inverted orientation relative to, the 20 consecutive nucleotides in length identical to the region of the target gene.
213. (Previously Presented) The mammalian cell of claim 188, wherein the first structural gene sequence consists of 20 consecutive nucleotides identical in sequence to a region of a target gene encoding a viral DNA polymerase, a viral RNA polymerase or a viral coat protein in a mammalian cell, and the second structural gene sequence consists of 20 consecutive nucleotides identical in sequence to, and in an inverted orientation relative to, the 20 consecutive nucleotides in length identical to the region of the target gene.
214. (Previously Presented) The isolated mammalian cell, tissue or organ of claim 200, wherein the first structural gene sequence consists of 20 consecutive nucleotides identical in sequence to a region of a target gene encoding a viral DNA polymerase, a viral RNA polymerase or a viral coat protein in a mammalian cell, and the second structural gene sequence consists of 20 consecutive nucleotides identical in sequence to, and in an inverted orientation relative to, the 20 consecutive nucleotides in length identical to the region of the target gene.
215. (New) A double-stranded DNA construct comprising:
a first structural gene sequence comprising about 20

consecutive nucleotides identical in sequence to a region of a visually-detectable gene in a mammalian cell;

a second structural gene sequence comprising about 20 consecutive nucleotides identical in sequence to, and in an inverted orientation relative to, the about 20 consecutive nucleotides of the first structural gene sequence, such that a repeating sequence which is only about 20 consecutive nucleotides in length identical to the region of the target gene is present in the DNA construct;

a stuffer fragment which consists of nucleotides and which separates and links the first and second structural gene sequences;

a promoter operable in the mammalian cell; and

a transcription termination sequence active in the mammalian cell,

wherein the repeating sequence within the DNA construct is only about 20 nucleotides in length, and

wherein the first structural gene sequence, the stuffer fragment and the second structural gene sequence are all operably connected to the promoter and the transcription termination sequence.

216. (New) The double-stranded DNA construct of claim 215, wherein the region of the target gene is in an exon.

217. (New) The double-stranded DNA construct of claim 215, wherein the target gene is a transgene in the mammalian cell.

218. (New) The double-stranded DNA construct of claim 215, wherein the target gene is an endogenous gene of the mammalian cell.

219. (New) The double-stranded DNA construct of claim 215, wherein the stuffer fragment is a sequence of nucleotides

10-50 nucleotides in length.

220. (New) The double-stranded DNA construct of claim 215, wherein the stuffer fragment is a sequence of nucleotides 50-100 nucleotides in length.
221. (New) The double-stranded DNA construct of claim 215, wherein the stuffer fragment is a sequence of nucleotides 100-500 nucleotides in length.
222. (New) The double-stranded DNA construct of claim 215, wherein the total length of the double-stranded DNA construct is no more than 0.5-2.0 kilobases.
223. (New) The double-stranded DNA construct of claim 215, wherein the double-stranded DNA construct is in a virus particle.
224. (New) The double-stranded DNA construct of claim 215, wherein the double-stranded DNA construct is in a liposome.
225. (New) The double-stranded DNA construct of claim 215, wherein the double-stranded DNA construct is integrated into the genome of the mammalian cell.
226. (New) A mammalian cell having a DNA construct comprising:
 a first structural gene sequence comprising about 20 consecutive nucleotides identical in sequence to a region of a visually-detectable gene in the mammalian cell;
 a second structural gene sequence comprising about 20 consecutive nucleotides identical in sequence to, and in an inverted orientation relative to, the about 20 consecutive nucleotides of the first structural gene sequence, such that a repeating sequence which is only about 20 consecutive nucleotides in length identical to the region

of the target gene is present in the DNA construct;

a stuffer fragment which consists of nucleotides and which is between and links the first and second structural gene sequences;

a promoter operable in the mammalian cell; and

a transcription termination sequence active in the mammalian cell,

wherein the repeating sequence within the DNA construct is only about 20 nucleotides in length, and

wherein the first structural gene sequence, the stuffer fragment and the second structural gene sequence are all operably connected to the promoter and the transcription termination sequence.

227. (New) The mammalian cell of claim 226, wherein the region of the target gene is in an exon.

228. (New) The mammalian cell of claim 226, wherein the target gene is a transgene in the mammalian cell.

229. (New) The mammalian cell of claim 226, wherein the target gene is an endogenous gene of the mammalian cell.

230. (New) The mammalian cell of claim 226, wherein the stuffer fragment is a sequence of nucleotides 10-50 nucleotides in length.

231. (New) The mammalian cell of claim 226, wherein the stuffer fragment is a sequence of nucleotides 50-100 nucleotides in length.

232. (New) The mammalian cell of claim 226, wherein the stuffer fragment is a sequence of nucleotides 100-500 nucleotides in length.

233. (New) The mammalian cell of claim 226, wherein the DNA construct is integrated into the genome of the mammalian cell.

234. (New) An isolated mammalian cell, tissue or organ, having a DNA construct comprising:

- a first structural gene sequence comprising about 20 consecutive nucleotides identical in sequence to a region of a visually-detectable gene in the mammalian cell;

- a second structural gene sequence comprising identical in sequence to, and in an inverted orientation relative to, the about 20 consecutive nucleotides of the first structural gene sequence, such that a repeating sequence which is only about 20 consecutive nucleotides in length identical to the region of the target gene is present in the DNA construct;

- a stuffer fragment which consists of nucleotides and which is between and links the first and second structural gene sequences;

- a promoter operable in the mammalian cell; and

- a transcription termination sequence active in the mammalian cell,

- wherein the repeating sequence within the DNA construct is only about 20 nucleotides in length, and

- wherein the first structural gene sequence, the stuffer fragment and the second structural gene sequence are all operably connected to the promoter and the transcription termination sequence.

235. (New) The isolated mammalian cell, tissue or organ of claim 234, wherein the region of the target gene is in an exon.

236. (New) The isolated mammalian cell, tissue or organ of claim 234, wherein the target gene is a transgene in the isolated mammalian cell, tissue or organ.

237. (New) The isolated mammalian cell, tissue or organ of claim 234, wherein the target gene is an endogenous gene of the isolated mammalian cell, tissue or organ.
238. (New) The isolated mammalian cell, tissue or organ of claim 234, wherein the stuffer fragment is a sequence of nucleotides 10-50 nucleotides in length.
239. (New) The isolated mammalian cell, tissue or organ of claim 234, wherein the stuffer fragment is a sequence of nucleotides 50-100 nucleotides in length.
240. (New) The isolated mammalian cell, tissue or organ of claim 234, wherein the stuffer fragment is a sequence of nucleotides 100-500 nucleotides in length.
241. (New) The isolated mammalian cell, tissue or organ of claim 234, wherein the DNA construct is integrated into the genome of the isolated mammalian cell, tissue or organ.
242. (New) The double-stranded DNA construct of claim 215, wherein the first structural gene sequence consists of 20 consecutive nucleotides identical in sequence to a region of a visually detectable gene in a mammalian cell, and the second structural gene sequence consists of 20 consecutive nucleotides identical in sequence to, and in an inverted orientation relative to, the 20 consecutive nucleotides in length identical to the region of the target gene.
243. (New) The mammalian cell of claim 226, wherein the first structural gene sequence consists of 20 consecutive nucleotides identical in sequence to a visually detectable gene in a mammalian cell, and the second structural gene sequence consists of 20 consecutive nucleotides identical in sequence to, and in an inverted orientation relative to,

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the 20 consecutive nucleotides in length identical to the region of the target gene.

244. (New) The isolated mammalian cell, tissue or organ of claim 234, wherein the first structural gene sequence consists of 20 consecutive nucleotides identical in sequence to a visually detectable gene in a mammalian cell, and the second structural gene sequence consists of 20 consecutive nucleotides identical in sequence to, and in an inverted orientation relative to, the 20 consecutive nucleotides in length identical to the region of the target gene.